



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/772,943	02/04/2004	Vacit Arat	P-US097-A-MF	6064
7590	04/06/2005		EXAMINER: TANG, MINH NHUT	
Microfabrica Inc. 1103 W. Isabel St. Burbank, CA 91506			ART UNIT	PAPER NUMBER
			2829	

DATE MAILED: 04/06/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/772,943

Applicant(s)

ARAT ET AL

Examiner

Minh N. Tang

Art Unit

2829

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 February 2004.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-32 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-10, 15-26, 31 and 32 is/are rejected.
- 7) ☒ Claim(s) 11-14 and 27-30 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 04 February 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Drawings

1. Figures 1(a)-1(g), 2(a)-2(f), and 3(a)-3(c) should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g).

Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

2. The drawings are objected to because 20 , 204(a , 204(b , 214(a , 214(b in Fig. 5
6))))
should be 206, 204(a), 204(b), 214(a), 214(b), respectively. Likewise for the reference numbers 228, 224(a) through 224(d), 232, 238 in Fig. 6; reference numbers 204(a), 204(b) in Fig. 12; reference numbers 242(a), 242(b) in Fig. 13; reference numbers 204(a), 204(b), 404(a), 404(b) in Fig. 14; reference numbers 602(a), 602(b), 606(a), 606(b) in Fig. 17.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet,

Art Unit: 2829

and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

3. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference character "402" in Fig. 14 has been used to designate both "probe" and "shaft". Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

4. The disclosure is objected to because of the following informalities: on page 14, paragraph [68], lines 10-11; page 16, paragraph [74], lines 9-10; page 20, paragraph

Art Unit: 2829

[91], lines 1-3; page 21, paragraph [93], line 3; page 22, line 4; and page 22, paragraph [95], lines 5-9, paragraph [96], lines 13-14, a “)” is missing.

Appropriate correction is required.

5. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Claim Objections

6. Claims 1-4, 6, 8, 11-15, 17-20, 22, 24, and 27-32 are objected to because of the following informalities:

a/ in claim 1, line 6, “the probe” should be -- the first end --.

b/ in claims 2 and 18, “the contact pad” (two terms in lines 2 and 3) should be -- the pad --.

c/ in claims 3-4 and 19-20, line 1, “a plurality of the arms” should be -- the plurality of contact arms --.

d/ in claims 6, 8, 22 and 24, line 1, since there is insufficient antecedent basis for the limitation “the compliance”, therefore, for examination purposes, “the compliance” is interpreted as -- a compliant force --. Furthermore, “in a direction” (claims 6 and 22, line 1) should be deleted.

e/ in claims 11, 14, 27 and 30, line 2, “the probe”, and “a pad” should be -- each of the first ends --, and -- a corresponding pad --, respectively.

f/ in claims 12 and 28, line 2, “the probe”, and “probe” should be -- the first end --.

g/ in claims 13 and 29, limitation followed by linking terms (e.g., preferably, maybe, for instance, especially) is considered indefinite since the resulting claim does not clearly set forth the metes and bounds of the patent protection desired, therefore "may be" should be -- is --. Furthermore, "a contacted probe and pad" should be -- the contact arms and the pad --. Additionally, claim 29 should depend upon claim 27.

h/ in claims 15 and 31, it is not clear which device or element formed from a plurality of adhered layers. For examination purposes, "formed from a plurality of adhered layers" is interpreted as -- each of the plurality of contact arms formed from a plurality of adhered layers --.

i/ in claims 17 and 32, "the probe" (claim 17, line 6; claim 32, line 7), and "a compliant structure" (claim 32, line 3) should be -- the probe device --, and -- the compliant structure --, respectively. Furthermore, with the recitation "contact is made", it is not clear which devices are making contact. For examination purposes, "contact is made" is interpreted as -- contact between the first end and the pad is made --.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

8. Claims 1-10, 15-26, 31, and 32 are rejected under 35 U.S.C. 102(b) as being anticipated by Littlebury et al. (U.S.P. 5,177,438).

As to claim 1, Littlebury et al. disclose, in Figs. 1 and 2, a probe device (10) for testing integrated circuits (26), comprising: a bridging element (11); a plurality of contact arms (18, only one shown), each having a first end (17) and a second end (13), where the second end (13) of each connects to the bridging element (11) and the first end (17) of each is configured to contact a pad (27) of an integrated circuit (26) and wherein the arms (18) are configured to scrub (see, for example, column 2, lines 55-57) the surface of the pad (27) as contact between the first end (17) and the pad (27) is made.

As to claims 2 and 18, Littlebury et al. disclose in Fig. 2, a relative movement between the bridging element (11) of the probe device (10) and the pad (27) of the integrated circuit (26) is substantially perpendicular to a plane of the pad (27).

As to claims 3 and 19, Littlebury et al. disclose in Figs. 1 and 2, the plurality of contact arms (18) have an outward taper.

As to claims 4 and 20, Littlebury et al. disclose in Figs. 1 and 2, the plurality of contact arms (18) have an inward taper.

As to claims 5 and 21, Littlebury et al. disclose in Figs. 1 and 2, the second end (13) of each arm (18) comprises a compliant member (12).

As to claims 6, 8, 22 and 24, Littlebury et al. disclose in Figs. 1 and 2, a compliant force (see Fig. 2) is provided in a direction parallel to a direction of relative movement between the pad and the bridging element.

As to claims 7 and 23, Littlebury et al. disclose in Figs. 1 and 2, the bridging element (11) comprises a compliant member (12).

As to claims 9 and 25, Littlebury et al. disclose in Figs. 1 and 2, the compliant member (12) is located adjacent the plurality of arms (18).

As to claims 10 and 26, Littlebury et al. disclose in column 2, lines 44-47, the compliant member (12) is located away (i.e., partially cover the bridging element 11) from a location where the second end (13) of the arms (18) contact the bridging element (11).

As to claims 15 and 31, Littlebury et al. disclose in Figs. 1 and 2, each of the plurality of contact arms (18) formed from a plurality of adhered layers (13, 14, 16, 17).

As to claim 16, Littlebury et al. disclose in column 2, lines 37-39, the compliant member (12) is formed from a plurality of adhered layers of material.

As to claims 17 and 32, Littlebury et al. disclose in Figs. 1 and 2, a probe device (10) for testing integrated circuits (26), comprising: a compliant structure (12); a bridging element (11) adhered to the compliant structure (12); a plurality of contact arms (18, only one shown), each having a first end (17) and a second end (13), where the second end (13) of each connects to the bridging element (11) and the first end (17) of each is configured to contact a pad (27) of an integrated circuit (26) and wherein the arms (18) is configured to provide compliance between the probe device (10) and the pad (27) as contact between the first end (17) and the pad (27) is made.

Allowable Subject Matter

9. Claims 11-14, and 27-30 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Art Unit: 2829

10. The following is a statement of reasons for the indication of allowable subject matter:

Claims 11-13, and 17-29 recite, inter alia, at least one pushing element that causes the arms to separate as each of the first ends is mated to a corresponding pad.

Claims 14 and 30 recite, inter alia, at least one pulling element that causes the arms to come together as each of the first ends is mated to a corresponding pad.

The art of record does not disclose the above limitations, nor would it be obvious to modify the art of record so as to include the above limitations.

It is noted that claims 11-14, and 27-30 should be amended to overcome the objection set forth above.

Conclusion

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

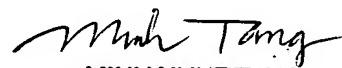
Grube	6,811,406	Microelectronic Spring With Additional Protruding Member.
Jones et al.	6,351,133	Packaging And Interconnection Of Contact Structure.
Mathieu et al.	6,255,126	Lithographic Contact Elements.
Yanof et al.	5,513,430	Method For Manufacturing A Probe.
Aton et al.	5,128,612	Disposable High Performance Test Head.

Art Unit: 2829

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Minh N. Tang whose telephone number is (571) 272-1971. The examiner can normally be reached on M-F (7:00-3:30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nestor R. Ramirez can be reached on (571) 272-2034. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


MINH NHUTTANG
PRIMARY EXAMINER
3/31/05